

**ABSTRACT OF THE DISCLOSURE**

The present invention provides a method of calibrating a wireless tracking system and a method of tracking a mobile unit in a wireless local area network. The method includes providing at least one calibration signal using a mobile unit having a first plurality of antennae while the mobile unit is proximate at least one predetermined location and receiving a plurality of signals at a second plurality of antennae in response to providing the at least one calibration signal. The method also includes determining a portion of a transmission matrix using the plurality of received signals and the at least one calibration signal and associating the portion of the transmission matrix with the predetermined location.